

# Individual Project : Programming with Web APIs

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2153050

孙岩

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## Design

In this project, I chose the option "Option 1: A City Information Query Utility for World Urban Study" in the given requirement statement to develop my program.

## Perspectives

*You are required to develop a mashup-based application or app individually by integrating Web APIs, such as REST APIs, GraphQL APIs, or SOAP-based Web Services. You need to select the target application domain and find the available Web APIs by yourself. Your application must integrate information on a specific topic or domain from at least 4 different providers.*

- *Type in one city name and get its comprehensive information on several aspects.*
- *Target aspects of information are listed in the UI mockup:*
  - *general information*
  - *economy*
  - *environment*
  - *society*
  - *technology*
  - *dataset*

- *online map*
- *...*
- *Information sources are not fixed. Besides Wikipedia, Baidu, Gaode Map, Google Dataset Search, and APIs in the table provided, you can also add websites of your own based on introductions and hints in the mockup.*
- *Besides aspects in the mockup, you can also add other aspects if you are interested.*

## Design

According to the perspectives above, I have chosen some aspects of city information like:

- brief information
- news
- weather
- AQI and air quality
- position and map

My design for this program includes an input box for entering data for the region to be searched, a display platform for displaying the above data clearly, and some operation buttons for querying and webpage jumping.

## Implementation

### Implementation

For the sake of beautiful web pages and concise code, my application mainly uses `vue` and `element UI` for implementation.

The application is divided into two pages: the home page mainly highlights the search box; The information display page has access to some online APIs to display detailed information about the region, including geographical location, weather details, news, region introduction, and so on.

When searching for information, the program first checks whether the input information is valid, then sends the request as a parameter to different APIs and displays the returned information on the display page.

The APIs accessed by this application and their document links will be listed in the appendix of this report.

## Page display

- the Homepage



- Searching with invalid input



- the Information Display Page



## Appendix: APIs and Their Document Links

1. 百度百科 API ([baike.deno.dev](https://baike.deno.dev))
  - a. 百度百科 API ([baike.deno.dev](https://baike.deno.dev))
2. 全部接口 - 天行数据TianAPI
  - a. 地区新闻API接口 - 天行数据TianAPI
3. 文档 | 和风天气开发服务 ([qweather.com](https://qweather.com))
  - a. 城市搜索 for API | 和风天气开发服务 ([qweather.com](https://qweather.com))
  - b. 空气质量 | 和风天气开发服务 ([qweather.com](https://qweather.com))
4. APISpace-探索API数据接口-API接口大全-免费API接口服务
  - a. 天气预报查询-API文档-APISpace-API数据接口-API接口大全-免费API接口服务
5. 开发 | 高德地图API ([amap.com](https://amap.com))
  - a. JS API 结合 Vue 使用-基础-进阶教程-地图 JS API 2.0 | 高德地图API ([amap.com](https://amap.com))